

USSR

UDC 535.33

SEVCHENKO, A. N., OL'DEKOP, YU. A., ZYAT'KOV, I. P., BYLINA, G. S., SAGAYDAK, D. I., SHINGEL', I. A.

"Investigation of the IR Spectra of Poly-n-Formylstyrene, Styrene Copolymers, n-Formylstyrene, and Some of Their Derivatives"

Minsk, Zhurnal Prikladnoy Spektroskopii (Journal of Applied Spectroscopy), Vol 13, No 4, Oct 1970, p 633-638

Abstract: The authors study the ir spectra of several styrene (S) and n-formylstyrene (FS) copolymers containing various aldehyde groups as well as several aldehyde group derivatives: namely, poly-n-formylstyrene (PFS); copolymers I-V containing 23.8, 31.9, 36.0, 40.2, and 45.6 mole % FS, respectively; Schiff copolymers I and V; phenylhydrazone copolymer IV; azine copolymer I, III, IV, and V; oxime copolymers IV and V; and acetal - methyl alcohol copolymer III. The polymer samples were ground together with a quantity of KBr and then pressed into tablets. The spectra were taken with a UR-10 spectrophotometer. The spectral regions studied were 3100 to 2700 cm^{-1} and 2000 to 700 cm^{-1} .

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SEVCHENKO, A. N. et al, Zhurnal Prikladnoy Spektroskopii, Vol 13,
No 4, Oct 1970, p 633-638

The ir spectra of S, PS, and PFS are analyzed, compared, and interpreted in detail. The ir absorption spectra are plotted and presented in the form of curves. Numerous bands are identified and related to specific bond vibrations and atomic groups.

The authors thank L. K. Burykina for assistance in preparing the samples. Orig. art. has 4 figs. and 7 refs.

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USSR

SAGAYDAK, M. I.

UDC: 519.3:62-50

"An Example of Differential Games With Fixed Time"

V sb. Prikl. mat. i programmir. (Applied Mathematics and Programming) No. 3, Iishinev. Academy of Sciences of the Moldavian SSR, 1970, pp 49-59 (from RZh-Matematika, No. 3, March 71, Abstract No. 3B337)

Translation: The author considers an example of a pursuit game in which the time consumed is insufficient for its completion and, assuming some discrimination of the escaping player, a complete solution of this game problem is given. Author's abstract

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Pulse Technique

USSR

UDC: 681.327.13

PORITSKIY, O. V., SAGAYDAK, V. A.

"A Method for Magnetic Recording and Reproduction of Marker Pulses"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 6, 1970, p 36, patent No 262172, filed 22 Nov 68

Abstract: This author's certificate introduces a method for magnetic recording and reproduction of marker pulses by recording a harmonic signal and forming the marker pulses where the reproduced signal passes through zero. As a distinguishing feature of the patent, the linear density of marker pulse recording is increased by recording the harmonic signal simultaneously on several magnetic tracks. Playback of these tracks is done with the working gaps of the magnetic heads at an angle to produce a phase shift in the times when the signals played back from different magnetic tracks cross zero.

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472 020
UNCLASSIFIED
TITLE—A RELAPSE OF GASTRIC CANCER IN THE DUODENAL STUMP —U—
PROCESSING DATE—30OCT70
AUTHOR—SAGAYDAK, V.N.
COUNTRY OF INFO—USSR
SOURCE—KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 6, PP 83-85
DATE PUBLISHED—70
SUBJECT AREAS—BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS—DUODENUM, SURGERY, STOMACH, CANCER, NEOPLASM, CYTOLOGY
CONTROL MARKING—NO RESTRICTIONS
DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAE—3002/1850
STEP NO—UR/0497/70/048/006/0083/0085
CIRC ACCESSION NO—AP0129210
UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE—30OCT70
CIRC ACCESSION NO--AP0129210
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR INVESTIGATED THE
INCIDENCE OF RELAPSES IN THE DUODENAL STUMP AMONG 523 DECEASED AT REMOTE
PERIODS AFTER GASTRIC RESECTION FOR CANCER AND 83, AFTER GASTRECTOMY.
IN THE FIRST GROUP A RELAPSE WAS REVEALED IN 15 CASES (2.9PERCENT), IN
THE SECOND, IN THREE CASES (3.6PERCENT). A RELAPSE OF CANCER IN THE
DUODENUM IS ENCOUNTERED MORE RARELY THAN IN THE REMAINING PART OF THE
STOMACH AND NEOPLASTIC CELLS ALONG THE DISTAL EDGE OF THE RESECTED
PREPARATION ARE REVEALED MORE RARELY. FACILITY:
NAUCHNO-ORGANIZATSIONNYY INSTITUT EKSPIRIMENTAL'NOY I KLINICHESKOY
ONKOLOGII AMN SSSR.

UNCLASSIFIED

Acc. Nr: **AP0047364**

Ref. Code: **VP0589**

PRIMARY SOURCE: Vestnik Khirurgii imeni I. I. Grekova, 1970,
Vol 104, Nr 1, pp 78-82

ON SUBJECTIVITY IN ESTIMATION OF THE OPERATIVE FINDINGS
IN SURGERY FOR GASTRIC CANCER

Sagaydak, V. N.

The analysis of operative and autopsy findings in various groups of patients died after surgery for gastric cancer has demonstrated that in operations for cancer of the stomach up to 20 per cent of patients is considered inoperable erroneously. This is explained by poor reliability of current methods of estimation of the process extension during laparotomy.

REEL/FRA

19790830

Magnetohydrodynamics

USSR

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IVANOV, A. A., KOZOROVITSKIY, L. L., RUSANOV, V. D., SAGDEYEV, R. Z., and SOBOLENKO, D. N.

"Experimental Observation of Electron Shock Waves in a Collisionless Plasma"

Moscow, Pis'ma v Zhurnal Eksperimental'nov i Teoreticheskoy Fiziki, Vol 14, No 11, 5 Dec 71, pp 593-596

Abstract: Experimental proofs of the existence of a stationary heat discontinuity (an electron shock wave) in a collisionless plasma are discussed and its parameters are interpreted in accordance with the theory. The structure of a thermal wave front that was obtained with an internal diamagnetic probe introduced into the chamber in hydrogen and argon discharges is shown. The initial plasma was produced by two high-frequency generators inside a glass tube of diameter 8 cm and length ≈ 250 cm in a longitudinal homogeneous magnetic field of the order of 0.5-5 koe. The initial gas pressure varied in the range $4-10 \cdot 10^{-4}$ torr and the charge particle concentration was $2 \cdot 10^{13} \text{ cm}^{-3}$, while the initial electron temperature was 10 ev. Local plasma heating up to electron temperatures of ≈ 300 ev was achieved with a narrow coil that generated a skew magnetosonic wave of large amplitude. The structure shows that there exists a region of values where a wave of the shock type with

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IVANOV, A. A., et al., Pis'ma v Zhurnal Eksperimental'nov i Teoreticheskoy Fiziki, Vol 14, No 11, 5 Dec 71, pp 593-596

a fairly steep pressure drop is formed. The velocity of this wave D depends on the mass of the gas ions and drops by approximately a factor of 2 upon changing to a discharge in argon. A similar wave structure was obtained with measurements with a specially designed double electric probe. Controlled experiments made on plasma afterglow with an electron temperature of ~ 0.5 eV showed that the length of the front and the wave velocity hold constant--i.e., are independent of the initial temperature -- but that the detailed structure of the front varies somewhat. Analysis of the expression for the velocity of the thermal wave shows that velocity should be a function of the mass of the ions, $\sqrt{1/M}$. Experiments with a xenon plasma showed that the wave velocity also decreases in accordance with this relationship. The width of the thermal wave front is found by taking into account the fact that the current velocity of cold electrons is dependent on the potential produced by hot electrons. A method for determining the density profile of the hot electrons is indicated. The authors claim that the analysis proves that a stationary electron shock wave exists in a collisionless plasma and note that such a shock wave can arise also in other situations, such as in the effective attenuation of a relativistic high-current beam in a plasma.

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VEKSHTEYN, G. YA., RYUTOV, D. D., and SAGDEYEV, R. Z.

"Asymptotic Solution in the Problem of Anomalous Resistance of Plasma Without Collisions"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 60, No 6, Jun 71, pp 2142-2154

Abstract: The authors examine the problem of the time evolution of distribution functions of charged particles in a homogeneous plasma placed into an external electric field E . They showed that in the range $t \rightarrow \infty$ the distribution functions vary self-similarly and all velocities increase with time.

The authors established that in the case when the current is parallel to the external magnetic field, the directional velocity of the electrons v varies essentially the same as by free acceleration: $v \sim \alpha (eE/m)t$, where α is a numerical coefficient which is less than, but on the order of, unity.

If the current is perpendicular to the external magnetic field, then the "escape" phenomenon disappears and the ratio of the directional velocity of electrons to their thermal velocity becomes much less than unity.

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VEKSHTEYN, G. YE., et al., Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 60, No 6, Jun 71, pp 2142-2154

The authors support their discussion of self-similar variables mathematically and graphically (Figure 1). Their investigation of self-similar equations for a one-dimensional model is also supported mathematically and graphically (Figure 2) as is the case for the three-dimensional model.

Finally, the authors discuss in detail the anomalous resistance to the current perpendicular to the magnetic field. Figure 3 depicts the interaction between one-dimensional oscillations and electrons in the magnetic field.

The article contains 3 figures and a bibliography of 12 titles.

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IVANOV, A. A., RUSANOV, V. D., and SAGDEYEV, R. Z.

"Electron Shock Waves in Collisionless Plasma"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki (Letters to the Journal of Experimental and Theoretical Physics), Vol 12, No 1, 5 July 1970, pp 29-31

Abstract: High concentrations of hot electrons tend to dissipate and cold electrons flow inward to compensate the charge in a plasma, since the ions do not have sufficient time to move. A stationary moving density jump of hot electrons can develop under conditions similar to those for a shock wave. The motion of the cold electrons in the electrical field generated by the hot electrons is described as in the theory of anomalous resistance.

The slope, thickness, and velocity of the shock wave are calculated. In general, the physical state of the front indicates the distribution function of the hot electrons. Heat can propagate through a collisionless plasma with the formation of a steep-fronted shock wave. A similar effect can occur when a plasma is heated by a strong relativistic beam. Orig. art. has 3 refs.

1/1

Acc. Nr: **AP0043798**

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, 1970, Vol 58, Nr 2, pp 737-746.

QUASIGASODYNAMIC DESCRIPTION OF A CLOUD
OF HOT ELECTRONS IN A COLD PLASMA

D. D. Ryutov, R. Z. Sagdeev

The one-dimensional problem of expansion of a rarefied hot electron cloud through a cold plasma is investigated. It is shown that expansion is accompanied by excitation of Langmuir oscillations. The counter action of the latter on the hot electron distribution can be taken into account in the quasilinear approximation. «Quasigasodynamic» equations describing the expansion process are derived by a method similar to the Chapman — Enskog method. Analytic solutions of the equations are obtained for various initial conditions.

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GALEYEV, A. A., LOMINADZE, D. G., PATARAYA, A. D., ~~SAGDEYEV, R. Z.~~, and
STEPANOV, K. N., Institute of High-Temperature Physics of the Academy of
Sciences USSR

"Anomalous Resistance of Plasma Due to Instability at Cyclotron Harmonics"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15,
No 7, 5 Apr 72, pp 417-420

Abstract: An expression for the anomalous resistance arising due to buildup of Bernstein modes is obtained and the nonlinear mechanism leading to saturation of the growth of oscillations is explained. It is noted that high anomalous resistance of plasma observed in many experiments is associated with the appearance of ion-sound instability; but that ion-sound instability can arise only for sufficiently strong nonisothermality $T_e \gg T_i$, and the anomalous resistance occurs when this condition is not fulfilled. It is observed that instability in electron cyclotron oscillations (Bernstein modes) has recently been discussed in connection with the problem of anomalous resistance; Bernstein modes are oscillations with the wave vector strictly or almost strictly perpendicular to the magnetic field and with frequencies of the order ω_{he} . As distinct from ion-sound, this instability

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GALEYEV, A. A., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 7, 5 Apr 72, pp 417-420

develops from $T_i \geq T_e$. An expression is obtained for ν_{eff} , the frequency of the oscillations at which electrons are scattered. The magnitude of ν_{eff} is small due to the "Pitayevskiy factor" $\kappa^2 \rho_e^2$. The resistance given by this expression is much less than the resistance due to ion-sound instability. It is stated that when electron-sound instability due to smallness of the increment of rise cannot develop and goes into a nonlinear mode such as in collisionless shock waves, this anomalous resistance in Bernstein modes will play the major role.

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Antibiotics

USSR

UDC 576.851.45.094.18:615.332(Streptomycinum)

KENIG, E. E., ZHUKOV, V. G., MALININA, Z. Ye., and SAGEYEVA, O. F., Institute of Human Morphology, Academy of Medical Sciences USSR, Moscow

"Changes in the Ultrastructure of the P. pestis in Guinea Pig Organisms Under the Effect of Streptomycin"

Moscow, Antibiotiki, Vol 18, No 6, Jun 73, pp 546-549

Abstract: The purpose of the study was to investigate changes in the ultrastructure of P. pestis in animal organisms treated with streptomycin. Guinea pigs were injected with a virulent culture (strain 363/4) and treatment with streptomycin was begun on the second day after infection. Treated animals were killed 2-10 days after treatment was begun and were studied bacteriologically and with an electron microscope. It was found that plague bacilli in this case may be subject to intracellular bacteriolysis, with preservation of the cytoplasmic membrane. Involution was manifested. Polymorphism of the plague microbe was more marked in animals treated with streptomycin than in the control animals, with bacterial cells 0.5-1.0 microns in size predominating. Under the influence of streptomycin, plague microorganisms lose their shells and cytoplasmic membranes and granulative degradation and lysis occur.

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KENIG, E. E., et al., Antibiotiki, Vol 18, No 6, Jun 73, pp 546-549

One of the early ultrastructural manifestations of therapeutically caused pathomorphism of experimental plague in guinea pigs treated with streptomycin is an increase in the number of lysosomes in the cytoplasm of the macrophages and neutrophils.

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USSR

UDC 669.782.018.9(088.8)

KEKELIDZE, M. A., and SAGINADZE, D. I.

"Method of Producing Silicon-Manganese-Calcium-Magnesium Alloy"

USSR Author's Certificate No 273237, Filed 28/08/68, Published 10/09/70
(Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract
No 2 G178 P)

Translation: A method is presented for the production of an alloy of Si with Mn, Ca, and Mg, consisting of reduction of Ca and Mg from roasted dolomite by the silicon alloy. To produce an Mg content of 4-6% in the alloy with an Mn content of 9-11%, reduction is performed by an alloy of Si with Mn containing Si greater than 70% at 1450-1750°.

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USSR

UDC 629.76/.78.015:533.6

KHILLER, M., SAGIROV, P.

"Damping of Satellite Vibrations by a Change in the Mass Distribution"

V sb. Upravleniye v kosmose. T. 1 (Control in Space. Vol 1 -- Collection of Works), Moscow, "Nauka", 1972, pp 126-136 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B370)

Translation: The possibility of damping vibrations of a gravitationally stabilized satellite by a consecutive triple change in its major moments of inertia is shown. A program for changing the moments of inertia is described and its shortcomings are noted. Authors' abstract.

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USSR

UDC: None

BASOV, N. G., MAL'TSEV, L. K., MARKIN, Ye. P., MARTYLENKO, V. D.,
ORAYEVSKIY, A. N., PANKRATOV, A. V., SAGITOV, R. G., and SEACHEKOV,
A. N.

"Chemical Laser of Mixed Difluoramin With Hydrogen"

Moscow, Sbornik kratkhiye soobshcheniya po fizike, No 11, November
1971, pp 3-9

Abstract: This brief communication reports oscillations obtained from oscillatory-rotatory transitions of HF molecules resulting from the reaction of NF_2H with hydrogen, specifically the time variations of the gain yielded by the mixture as a function of the experimental conditions. The experimental equipment consisted of two lasers, an oscillator, and an amplifier, excited by an electrical discharge through the mixture. The oscillator was a quartz tube 85 cm long and 1.7 cm in diameter, with LiF windows set at the Brewster angle. Determinations were made of the optimal relationships between the pressures of the NF_2H and H_2 in the mixture, and a curve is plotted of the energy of the pulse oscillation in the mixture as a function of the ratio of the two pressures. Curves are also plotted for the gain factor in the mixture as a function of time. The authors express their thanks to L. V. Kulakov for his help in plotting the pulse energy spectrum.

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USSR

SAGITOVA, N. Kh.

"Stability of Circular Conical Envelope"

Sb. Aspirantsk. Rabot. Kazan. Un-t. Tochn. Nauki, mekh., Fiz. [Collection of Graduate Papers of Kazan University, Precise Sciences, Mechanics, Physics], Kazan', 1971, pp 53-57, (Translated from Referativnyy Zhurnal, Mekhanika, No 4, 1972, Abstract No 4 V394 by V. P. Mal'tsev).

Translation: The stability of thin, isotropic elastic conical envelopes with axisymmetrical loadings can be determined on the basis of equations from the theory of smooth envelopes. The subcritical moment stressed state of a freely mounted envelope is found from the Meisner equations written for the angle of rotation of a tangent to the meridian and the stress function. The addition of bend w and force function f arising upon loss of stability are approximated as

$$\begin{aligned} w &= A r_1 e^{n_1 z} \sin m_1 z \cos n_1 \varphi_1, \quad f = B r_1^2 e^{n_1 z} \sin m_1 z \cos n_1 \varphi_1, \\ z &= \ln(r/r_1), \quad m_1 = m\pi/t, \quad t = \ln(r_0/r_1), \quad \varphi_1 = \varphi \sin \beta, \quad n_1 = \\ &= n/\sin \beta, \end{aligned}$$

where

r and r_1 are the distances along the generatrix from the tip of the cone to an arbitrary point on the midsurface and to the large base, ϕ is the coordinate

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USSR

SAGITOVA, N. Kh., Sb. Aspirantsk. Rabot. Kazan. Un-t. Tochn. Nauki, mekh., Fiz., Kazan', 1971, pp 53-57.

in the circumferential direction, 2β is the conicity angle at the tip, n is the number of circumferential waves, m is the number of waves of loss of stability along the generatrix, ν is a parameter determined from the condition of the minimum critical load. The relationship between ν and ν_1 is established from the equation of compatibility of deformations. The characteristic equation is written but not studied.

USSR

UDC 547.759.3:542.953.4

MEL'NIKOVA, T. V., KOST, A. N., SAGITULLIN, R. S., AND BORISOV, N. N., Moscow
State University imeni M. V. Lomonosov

"Indole Chemistry. XXXVIII. Splitting of the Carbon-Carbon Bond in the
Reaction of 2-Aminoindoles with Bifunctional Compounds"

Riga. Khimiya Geterotsiklicheskikh Soyedineniy, No 9, Sep 73, pp 1273-1278

Abstract: Reaction of 2-aminoindole with α , β -unsaturated aldehydes
and ketones yields α -carbolines. In this reaction the β -carbon atom
of the keto compound attacks the C₃ atom of the indole. The reaction with
bifunctional derivatives occurs in many cases with a split of the carbon-
carbon bond, leading to the formation of a pentacyclic system of indolo[2,3-b]-
- α -carboline. Identical compounds can be obtained from 3-arylidene-2-
-aminoindole or 3-arylideneoxindoles. Substituting one molecule of 2-amino-
indole by other acceptors failed to yield nonsymmetric structures.

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USSR

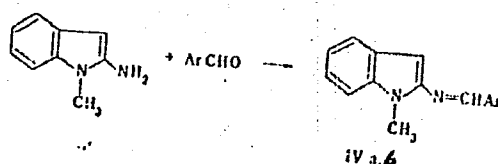
UDC 547.752'759.5:542.953.4

KOST, A. N., SAGITULLIN, R. S., MEL'NIKOVA, T. V., and KAPLUN, G. V., Moscow
State University imeni M. V. Lomonosov

"Indole Chemistry. 32. Reaction of 1-Methyl-2-Aminoindole With Aldehydes"
Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 10, 1972, pp 1368-1373

Abstract: The 1-methyl-2-aminoindole will react with RCHO in alcoholic alkali to form a pentacyclic structure with the elimination of H₂O, NH₃, and H₂. By varying conditions, one mole of the HI salt of the aminoindole will condense with one mole of ArCHO to form a Schiff's base in the presence of base according to the reaction

[reaction II]

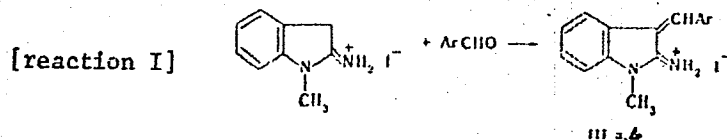


or a salt in its absence by

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KOST, A. N., et al., Khimiya Geterotsiklicheskikh Soyedineniy, No 10, 1972, pp 1368-1373



(a:Ar={-3,4-(CH₃O)₂C₆H₆}; b:Ar={4-(CH₃)₂NC₆H₄}) IR spectra confirm the presence of these compounds. Several derivatives of 1,3-dimethyl-2-aminoindole were also prepared and characterized.

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USSR

UDC 547.752'759.5:542.953.4

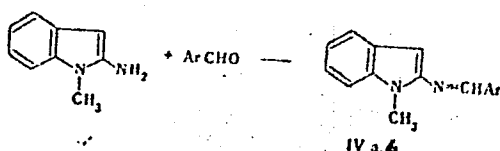
KOST, A. N., SAGITULLIN, R. S., MEL'NIKOVA, T. V., and KAPLUN, G. V., Moscow State University imeni M. V. Lomonosov

"Indole Chemistry. 32. Reaction of 1-Methyl-2-Aminoindole With Aldehydes"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 10, 1972, pp 1368-1373

Abstract: The 1-methyl-2-aminoindole will react with RCHO in alcoholic alkali to form a pentacyclic structure with the elimination of H₂O, NH₃, and H₂. By varying conditions, one mole of the HI salt of the aminoindole will condense with one mole of ArCHO to form a Schiff's base in the presence of base according to the reaction

[reaction II]



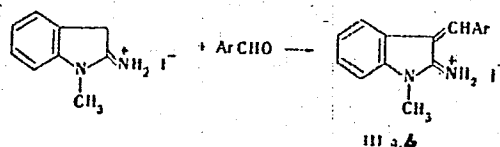
or a salt in its absence by

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USSR

KOST, A. N., et al., Khimiya Geterotsiklicheskikh Soyedineniy, No 10, 1972, pp 1368-1373

[reaction I]



(a:Ar={-3,4-(CH₃O)₂C₆H₆}; b:Ar={4-(CH₃)₂NC₆H₄}) IR spectra confirm the presence of these compounds. Several derivatives of 1,3-dimethyl-2-aminoindole were also prepared and characterized.

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USSR

UDC 547.752'83:543.422.4

SAGITULLIN, R. S., BORISOV, N. N., KOST, A. N., and SIMONOVA, N. A., Moscow State University imeni M. V. Lomonosov

"Indole Chemistry. XX. Reaction of 2-Aminoindoles With α - β -Unsaturated Ketones"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 1, Jan 71, pp 61-64

Abstract: α - β -Unsaturated ketones react with 1-alkyl-2-aminoindoles forming α -carbolines: refluxing 1-methyl-2-aminoindole hydroiodide with benzalacetophenone in isopropyl alcohol and equivalent amount of a base yielded 82% of 9-methyl-2,4-diphenyl- α -carboline, m.p. 123-24°. Analogously 2-aminoindole condensed with dibenzoyl methane or benzal-acetophenone yields 2,4-diphenyl-pirimidino-[1,2]-indole, m.p. 222-224°. Finally, 1-methyl-2-aminoindole or 1-benzyl-2-aminoindole react with methylacetylacetone forming 2,3,4,9-tetramethyl- α -carboline, m.p. 150-152°, and 2,3,4-trimethyl-9-benzyl- α -carboline, m.p. 217-219° respectively.

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UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--TRANSFER OF SUBSTITUENT EFFECTS ACROSS THE INDOLE RING -U-

AUTHOR--(05)--KOST, A.N., MINKIN, V.I., SAGITULLIN, R.S., GORBUNOV, V.I.,
SADEKOV, I.D.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 845-53

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--INDOLE DERIVATIVE, CARBOXYLIC ACID, ELECTRON DONOR, CHEMICAL
SUBSTITUENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2081

STEP NO--UR/0366/70/006/004/0845/0853

CIRC ACCESSION NO--AP0125668

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125668

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE PK VALUES AND SIGMA CONSTS.

(TAFT, HAMMETT, WEBSTER, AND DENAR CONSTS.) WERE DETD. FOR SUBSTITUTED

INDOLE-2-CARBOXYLIC ACIDS (I). THE TRANSFER OF THE ELEC. CHARGES IN

THIS RING SYSTEM IS WEAKER THAN IN CARBOCYCLIC SYSTEMS. THE ELECTRON

DONATING GROUPS HAVE VERY LITTLE EFFECT. THE RELATION OF STRUCTURE WITH

THE PK OF I IS BEST EXPRESSED IN TERMS OF THE DENAR THEORY.

FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/3 010

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--INDOLE CHEMISTRY. XI. SYNTHESIS OF ALPHA CARBOLINES AND
PYRIMIDO,1,2,A,INDOLES FROM 2,AMINOINDOLES -U-
AUTHOR--(04)-KOST, A.N., SAGITULLIN, R.S., GORBUNOV, V.I., MODYANOV, N.N.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (3), 359-63 (RUSS).

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--INDOLE DERIVATIVE, CHEMICAL SYNTHESIS, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605002/D11 STEP NO--UR/0409/70/000/003/0359/0363

CIRC ACCESSION NO--AP0139462

UNCLASSIFIED

2/3 010

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139462
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. TO ETONA (FROM 23 G NA IN 230 ML ETOH) WAS ADDED AT 15DEGREES 146 G (ETO SUB2 C) SUB2 AND 137 G O,NITROTOLUENE (II). THE MIXT. WAS REFLUXED 25 MIN. 100 ML H SUB2 O ADDED, ADN REFLUX CONTINUED FOR 1 HR. ETOH AND I WERE STEAM DISTD., THE REMAINING SOLN. WAS TREATED WITH NORIT AT 75-80DEGREES, AND THEN AT 50DEGREES WAS ADDED 49 G NH SUB2 OH.HCL IN 75 ML H SUB2 G TO YIELD 57PERCENT O,NITROPHENYLPYRUVIC ACID OXIME (II), M. 158-60DEGREES. II REFLUXED IN H SUB2 O WITH ACOH GAVE O,NITROBENZYL CYANIDE (III), M. 78-82DEGREES. III, REDUCED IN PROH WITH SN AND HCL GAVE O,AMINOBENZYL CYANIDE (IV) IN 90PERCENT YIELD. IV (16 G) IN 100 ML ISO-PROH WAS ADDED TO ISO-PRONA (FROM 10 G NA IN 200 ML PROH) AND THE MIXT. REFLUXED 1 HR UNDER H TO YIELD 70PERCENT 2,AMINOINDOLE,HCL (V), M. 224-6DEGREES. V WITH MEI GAVE 90PERCENT 1,METHYL,2AMINOINDOLE,HI (VI), M. 262-3DEGREES. SIMILARLY WAS OBTAINED IN 65PERCENT YIELD 1,BENZYL,2,AMINO,INDOLE,HCL, M. 256-9DEGREES, AND IN 76PERCENT YIELD 1,CARBETHOXY,2,AMINO,INDOLE,HCL, M. 255-8DEGREES. A MIXT. OF 1 G VI, 0.75 G AC SUB2 CH SUB2 IN 8 ML DRY C SUB5 H SUB5 N WAS REFLUXED 2.5 HR UNDER INERT GAS TO YIELD 100PERCENT VII (R EQUALS MEI) M. 110-11DEGREES (OIL. ETOH), PICRATE M. 229-30DEGREES (MEOH). SIMILARLY WAS OBTAINED IN 64PERCENT YIELD V (R EQUALS PHCH SUB2), M. 120.5-1.5DEGREES (MEOH), PICRATE M. 227-9DEGREES (ETOH). A MIXT. OF 1 G VI, 2 G MALONALDEHYDE DIETHYL ACETAL AND 0.7 ML HCL IN 3 ML ETOH WAS KEPT 20 MIN AT ROOM TEMP., 15 ML C SUB5 H SUB5 N ADDED ADN THE MIXT. KEPT OVERNIGHT TO YIELD 8PERCENT 1,METHYL,ALPHA,CARBOLINE M. 53DEGREES (HEXANE), PICRATE M. 225DEGREES (MEOH).

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CIRC ACCESSION NO--AP0139462
ABSTRACT/EXTRACT--A MIXT. OF

UNCLASSIFIED

PROCESSING DATE--04DEC70

SUBS H SUBS N WAS REFLUXED 1.5 HR IN INERT GAS ATM. TO YIELD 88PERCENT
VIII, M. 111.5-12.5DEGREES, PICRATE M. 227-90DEGREES (MEOH).
FACILITY: MOSK. GOS. UNIV., MOSCOW, USSR.

UNCLASSIFIED

USSR

SAGLANIK R.I.

UDC: 577.1

9

"Second All-Union Biochemical Congress"

Moscow, Biokhimiya, Vol 35, No 2, Mar-Apr 70, pp 425-435

Abstract: The Second All-Union Biochemical Congress was held on 20-28 Oct 69 at Tashkent under the auspices of the Uzbek Department of the All-Union Biochemical Society. Symposia on evolutionary biochemistry, the connection between the structure and functions of proteins, the biosynthesis of proteins, the biochemistry of membranes, biological oxidation, the functional biochemistry of cell structures, the regulation of enzymatic processes, the structure and function of muscles, and other subjects were conducted. The introductory lecture, which dealt with the evolutionary aspects of nucleic acids, was given by A. N. BELOZERSKIY (Moscow). A leading report in the symposium on evolutionary biochemistry was presented by A. I. OPARIN (Moscow), who discussed theories and experimental results pertaining to the origin of life on earth. A report by V. A. STEPANOV (Moscow) dealt with the evolution of protein enzymes. In the symposium on the biosynthesis of proteins, A. A. BAYEV (Moscow) reported the results of work on the structure of various t-RNA and the properties of molecular fragments of valine t-RNA. In the course of this work, for which a State Prize was awarded, the succession of nucleotides in the valine t-RNA chain was fully clarified. A paper by L. L. KISELEVA

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USSR

Biokhimiya, Vol 35, No 2, Mar-Apr 70, pp 425-435

(Moscow) dealt with the role of aminoacyl-t-RNA-synthetases in the synthesis of aminoacyl-t-RNA. t-RNA synthetases specific for methionine, formylmethionine, serine, lysine, and phenylalanine have been identified. A report by R. I. SAGLANIK (Novosibirsk) reviewed work on the suppression of the synthesis of virus nucleic acids by nucleases. Animal experiments showed that administration of DNA-ase prevented the death of mice infected with the viruses of tick-born encephalitis, influenza, and foot-and-mouth disease and made guinea pigs insusceptible for a certain length of time to infection with foot-and-mouth disease. The nucleases did not produce any toxic effects. Application of nucleases in the treatment of human virus diseases showed that they were effective in herpetic keratites, adenovirus conjunctivites, tick-born encephalitides, herpes zoster, and other diseases. At present DNA-ase for the treatment of these diseases is being produced industrially. Its application for 4 yrs at major foci of tick-born encephalitis in Siberia yielded very good results. Research is being continued on the use of nucleases in the treatment of virus diseases of farm animals. In the symposium on the biochemistry of membranes, P. G. KOSTRYUK (Kiev) in a report dealing with the transfer of ions in connection with the generation of excitation potentials by nerve cells expressed the opinion that the action of nerve impulse transmitters

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Biokhimiya, Vol 35, No 2, Mar-Apr 70, pp 425-435

is associated not only with changes in membrane permeability, but also involves a direct effect producing transfer of cations. This was confirmed in a paper by A. A. BOLDYREV (Moscow), who found that acetylcholine inhibited the active transfer of Ca^{++} in a sarcoplasm reticulum fraction. The inhibition was exerted on ATP-ase, which brings about transfer of Ca^{++} , and presumably constituted an effect that makes possible the transfer of Ca^{++} from the reticulum during excitation. Boldyrev pointed out that in view of the localization within muscle cells of the enzymes that regulate acetylcholine metabolism, this effect produced by acetylcholine may be directly related to its functioning as an intracellular regulator of excitation processes. Reports given by members of the Kiev school of biochemists (A. V. PALLADIN, O. V. KIRSENKO, G. L. VAVILOVA, M. K. MALYSHEVA, and others) had a bearing on the functioning of Na-K - activated transport ATP-ases in membranes. I. I. IVANOV (Leningrad) found that ATP gelated sarcoplasm proteins of skeletal muscles, whereas Ca^{++} liquefied the gel that formed. He assumed that a reversible gelation produced in this manner is responsible for the plastic tonus of smooth and striated muscles. In a resolution passed by the Congress, progress in biochemical research was reviewed. It was stated that the membership of the Biochemical Society increased from 3500 to 6500 between the First and Second Congress. Institutes of Proteins, Photosynthesis, and Physiology and Biochemistry

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Biokhimiya, Vol 35, No 2, Mar-Apr 70, pp 425-435

of Microorganisms were organized within the Academy of Sciences USSR. It was pointed out that it is necessary to conduct more intensive research in several fields including the structure of proteins in relation to their functional activity, biochemical genetics, and (in view of the importance of this field from the standpoint of solution of general problems of biochemistry) the biochemistry of microorganisms and viruses.

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USSR

UDC 539.3

SAGOMONYAN, A. Ya.

"Cylindrical Elastic Envelope with Fluid Under Axial Impact Loading"

Doklady Akademii Nauk SSSR, Vol 203, No 2, 1972, p 303-306.

Abstract: A thin wall, semi-infinite elastic cylindrical shell of circular cross section with a rigid bottom, filled with a compressible fluid, is studied. An external force acts on the bottom of the envelope in the axial direction. The force is dependent on time and, possibly, on the velocity and acceleration of the bottom. The problem is to determine the parameters of movement of the shell and liquid. In contrast to the ordinary theory of shells, this study determines the parameters of motion of the shell averaged through its slight thickness h .

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USSR

UDC: 517.9:533.7

SAGOMONYAN, A. Ya., PORUCHNIKOV, V. B.

"Three-Dimensional Problems of Unsteady Motion of a Compressible Fluid"

Prostranstvennyye zadachi neustanovivshegosya dvizheniya szhimayemoy zhid-
kosti (cf. English above), Moscow, Moscow University, 1970, 120 pp, ill.
22 k. (from RZh-Matematika, No 5, May 71, Abstract No 5B478 K)

Translation: The book contains analytical solutions of an extensive class of problems of unsteady motion of gas and compressible liquid. These problems fall chiefly into three groups: reflection of acoustic and shock waves from solid boundaries; impact penetration of solids into a compressible fluid; and penetration of a liquid, compressible half-space by pressure propagating over its surface. The solids treated in the problems have a geometric singularity of the vertex and rib type. The solutions for most of the problems are found in closed form. Authors' resumé.

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UNCLASSIFIED
TITLE--SOME CURRENT PROBLEMS IN THE THEORY OF COLLISIONS OF CONTINUOUS
MEDIA -U
AUTHOR--SAGGHCNANYAN, A.YA.
COUNTRY OF INFO--USSR
SOURCE--MOSKOVSKIY UNIVERSITET, VESTNIK, SERIYA I, MATEMATIKA, MEKHANIKA,
VOL. 25, MAR.-APR. 1970, P. 115-124
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--COLLISION, PLASMA JET, TURBULENT JET, SURFACE PROPERTY, JET
FLOW, THEORETIC PHYSICS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/1669
CIRC ACCESSION NO--AP0118833
STEP NO--UR/0055/70/025/000/0115/0124
UNCLASSIFIED

2/2 052

CIRC ACCESSION NO--AP0118833

UNCLASSIFIED

PROCESSING DATE--11DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REVIEW OF AVAILABLE SOLUTIONS TO
SEVERAL PROBLEMS OF MODERN TECHNOLOGY INVOLVING COLLISIONS OF CONTINUOUS
MEDIA. DISCUSSED SPECIFICALLY ARE SOLUTIONS TO THE PROBLEMS OF JET
COLLISIONS, IMPACT OF A PIN AT AN OBSTACLE, IMPACT OF A SOLID BODY AT
THE SURFACE OF A SEMIINFINITE MEDIUM, LONGITUDINAL IMPACT OF CYLINDRICAL
SHELLS, AND INTERACTIONS OF JETS EJECTED FROM JET ENGINE NOZZLES.
FURTHER THEORETICAL STUDIES IN THIS FIELD ARE URGED TO MEET THE GORWING
PRACTICAL REQUIREMENTS OF MODERN ENGINEERING.

UNCLASSIFIED

USSR

UDC 536.24

SAGOMONYAN, A. Ya., KULIKOV, V. A., Department of Gas and Wave Dynamics,
Moscow State University

"Explosion of a Spherical Charge in a Plastic Compressible Medium"

Moscow, Vestnik Moskovskogo Universiteta, Seriya I: Matematika, Mekhanika,
No 1, Jan/Feb 73, pp 85-92

Abstract: It is assumed that a finite spherical charge is located in a plastic compressible homogeneous isotropic medium filling all space. At some instant $t=0$ the charge, without changing volume, is instantaneously converted to a gas of high pressure and temperature. A shock wave arises in the plastic medium as a result of the explosion. It is required to find the law of propagation of this wave, and also the pressure, velocity and temperature fields. It is assumed that during loading (increasing pressure), the plastic medium changes its density in accordance with a certain law, but that during unloading (decreasing pressure) it retains the density acquired during loading. It is assumed further that a particle is subjected to maximum compression on the shock wave. Obviously, the problem has spherical symmetry. In virtue of the above-mentioned property

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USSR

SAGOMONYAN, A. Ya., KULIKOV, V. A., Vestn. Mosk. Un-ta: Ser. I, Mat., Mekh.,
No 1, Jan/Feb 73, pp 85-92

of the medium, in the Lagrangian coordinate system r, t , where r is the distance of a particle of the medium from the center of the charge to the origin of motion, the density of the medium behind the shock wave is a function of the coordinate r , and is independent of time t . The parameters of motion of the medium are calculated for an explosion process with constant and variable densities behind the shock wave.

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USSR

SAGOYAN, A. N., BABADZHANYAN, K. G.

UDC: 8.74

"On Optimum Procedures for Troubleshooting"

Izv. AN ArmSSR, ser. tekhn. n., 1972, 25, No 3, pp 53-56 (from RZh-Kibernetika, No 5, May 73, abstract No 5V856 by O. Belkin)

Translation: The paper attempts to systematize somewhat the results found previously on optimizing troubleshooting routines in complex systems. The systematization is done in accordance with the number of criteria of optimality, the number of trouble spots in the object being checked, the number of input data required for diagnosis, the positive results of diagnosis, and the relations between separate checks.

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USSR

UDC 621.355.8.035.2

ANTONENKO, B. A., and SAGOYAN, L. N.

"Description of the Process of Impregnating Metal-Ceramic Nickel-Oxide Electrodes of Alkali Batteries by a Leveling of Experiments Method"

Sb. rabot. no khim. istochnikam toka. Vses. n.-n akkumulyator. in-t (collection of Works on the Chemical Sources of Current, All-Union Scientific Study Institute for Storage Batteries.), Vyp 7, 1972, pp 34-40 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L233)

Translation: A mathematical description is given for the process of impregnating the metal-ceramic nickel-oxide electrodes of alkali batteries in the form of two linear regression equations. The effects derived during the course of the process are described. The optimum conditions were determined which resulted in an intensification of the impregnation and increasing yield of the desired product. (Author's abstract)

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USSR

UDC 621.35.035.2.001.2

ANTONENKO, P. A., BARSUKOV, V. Z., ~~SAGOYAN, L. N.~~

"Calculation of Dynamic Characteristics of 3-Phase Liquid Non-Lamellate Electrodes"

K Raschetu Dinamicheskikh Kharakteristik Trekhfaznykh Zhidkostnykh Bezlamel'nykh Elektrodiv, Moscow, 1971, 10 pages. (Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract No 4L226 Dep by the authors).

Translation: A method is studied allowing a significant reduction in the number of dynamic characteristics of charging (discharging) of a 3-phase liquid non-lamellate electrode which must be calculated. It is established that the dynamic characteristics of electrodes of various thicknesses are similar at identical temperature. In connection with this, it is sufficient to calculate only one dynamic characteristic, from which a transition can be made to an arbitrary version of the electrode by changing the scales along the coordinate axes. Relationships are presented for calculation of the internal resistance of an electrode and the energy losses on the electrode during the discharge process. The use of elements of the theory of similarity allows the time expenditure to be reduced, while improving the clarity and generality of the results and allowing studies to be performed in analytic form.

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USSR

UDC 621.355.8.035.2

ANTONENKO, P. A., BARSUKOV, V. Z., KRAPIVNYI, N. G., SAGOYAN, L. N.
"Study of a Cermet Nickel-Nickel Oxide Electrode. Report I. Structural Characteristics of the Electrode"

Khim. tekhnologiya. Resp. mezhd. temat. nauch.-tekhn. sb. (Chemical Technology. Republic Interdepartmental Thematic Scientific and Technical Collection), No 24, pp 96-98 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L265)

Translation: A study was made of a cermet nickel-nickel oxide electrode of an alkaline storage battery comprising two porous phases. The dependence of the effective porosity of the base of the electrode on the amount of filler and its thickness was investigated. It was established that with the existing technological process of depositing Ni(OH)_2 in the pores of the base, the latter occupies only 57% of the pore space.

USSR

UDC 621.355.6.035.4

ANTONENKO, P. A., BARSUKOV, V. Z., ~~SAGDYAN, I. N.~~

"Study of the Conductivity of Electrolytes used in Alkaline Batteries"

Khim. tekhnologiya. Resp. mezhved. temat. nauch.-tekhn. sb. (Chemical Technology. Republic Interdepartmental Thematic Scientific and Technical Collection), 1971, vyp. 23, pp 42-44 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 6L246)

Translation: An experimental test was run on the colloid-liquid compound method for measuring the conductivity of solutions of strong electrolytes to DC current. The results obtained when investigating the conductivity of KOH, NaOH, LiOH and KOH+LiOH solutions in a broad temperature and concentration range agree well with the published data.

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USSR

UDC 621.355.8.035.2

ANTONENKO, P. A., GULYAMOV, YU. M., and SAGOYAN, I. H.

"Study of the Specific Conductivity of the Active Mass of a Nickel Oxide Electrode"

Khim. tekhnologiya: Resp. nakhved. temat. nauch.-tekhn. sb. (Chemical Technology. Republic Interdepartmental Thematic Scientific and Technical Collection), 1971, vyp. 23, pp 44-51 (from Khim.-Khimiya, No 6 (II), Jun 72, Abstract No 6L245)

Translation: The magnitude of the specific conductivity of active masses of nickel oxide electrodes cycling in different electrolytes (KOH, NaOH and LiOH) are defined as functions of the temperature and degree of acidity. The mathematical equations describing the indicated functions are presented. The conductivity of the active mass of the nickel oxide electrode increases with an increase in temperature. The sharpest variation of the conductivity is observed in the low temperature range (-50 to +10°). With an increase in the degree of acidity, the conductivity of the active mass also increases and reaches a limiting value for an "active oxygen" content in the mass >65%. This is explained by the appearance of a sufficient amount of higher nickel oxides (in all probability NiO₂) in the mass which have high conductivity.

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USSR

UDC 543.545+546.719+546.881+546.77+546.78

GAYBAKYAN, D. S., and SAGRADYAN, S. I., Yerevan State University, Yerevan

"Electrochromatography of Rare Elements. II. Separation of Rhenium (VII), Molybdenum (VI), Vanadium (V), and Tungsten (VI) in a Sulfuric Acid Solution on a Layer of Aluminum Oxide"

Yerevan, Armyskiy Khimicheskiy Zhurnal, Vol 24, No 8, 1971, pp 668-672

Abstract: By applying electrochromatography on a thin layer of Al_2O_3 , the separation and detection of microgram amounts of Re, Mo, V, and W were studied, using H_2SO_4 solutions as an electrolyte. The optimum conditions for the quantitative separation of these elements in the form of ReO_4^- , MoO_4^{2-} , VO_3^- , and WO_4^{2-} were a potential of 400 V applied for 30 min, a current strength of 1-3 mA, and 0.1 mm thickness of the Al_2O_3 layer, and an H_2SO_4 concentration of 0.1 N. The electrochromatogram was developed by sprinkling with a 35% $SnCl_2$ solution in HCl and then a 50% aqueous solution of K or Na thiocyanate, whereupon the spots corresponding to ReO_4^- , MoO_4^{2-} , VO_3^- , and WO_4^{2-} were colored orange, violet, yellow and yellow-green, respectively. The mobility toward the 1/2

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GAYBAYAN, D. S., and SAGRADYAN, S. I., *Armianskiy Khimicheskiy Zhurnal*,
Vol 24, No 8, 1971, pp 668-672

anode decreased in the order $\text{Re} > \text{Mo} > \text{W} \geq \text{V}$, with V remaining at the start. The area of the Mo spot was proportional to the concentration of this element in the solution, so that a quantitative determination of Mo could be carried out on this basis. At H_2SO_4 concentrations in the 0.05-0.5 N range, formation of two Mo spots was observed, one of which corresponded to MoO_2SO_4 and remained at the start while the other corresponded to $[\text{MoO}_2(\text{SO}_4)_2]^-$ and moved to the anode.

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USSR

UDC 621.762.2(088.8)

PATYUKOV, G. M., ROMANOV, A. I., BARANOV, M. N., BUTORIN, N. I., KHROMENKO, G. S., GONCHAROV, M. T., and SAGUNOV, T. M., Noril'sk Mining and Metallurgical Combine imeni A. I. Zavenyagin

"Electrolyzer for Making Metal Powder"

USSR Authors' Certificate No 267080, Cl. 40c, 1/02; 40c, 5/00, (C 22d), filed 21 Feb 67, published 23 Jan 70 (from RZh-Metallurgiya, No 3, Mar 71, Abstract NO 3G405P)

Translation: The electrolyzer contains a bath, anodes, disk cathodes fastened on a shaft, current supply unit, and drive mechanism. In order to decrease power consumption and increase dependability of electrolyzer operation, the drive mechanism is supplied with a toothed rack, which engages with the gear that is fixed on the shaft with the cathodes and imparts to the cathodes a reciprocating motion along the path of a pendulum. The contact at the point of the current supply to the shaft by the cathodes is made to be fixed. One illustration.

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Pesticides

USSR

UDC 631.81

SAIBOVA, M. T., IVANOV, R. N., BORUKHOV, I. A., and CHUMAKOV, F. P., Institute of Chemistry, Academy of Sciences, Uzbek SSR

"Effect of Magnesium Admixtures on the Physicochemical Properties of Ammophos"

Tashkent, *Uzbekskiy Khimicheskii Zhurnal*, No 4, 1972, pp 23-25

Abstract: Ammophos is produced by the Almalyk Chemical Plant in Uzbekistan from Karatau phosphorites and their flotation concentrates containing up to 3.5% MgO. The presence of ammonium-magnesium phosphate exhibiting varying degrees of saturation with crystal hydrate moisture does not have a significant effect on the physical properties of ammophos which possesses a substantial moisture cocapacity. However, when the latter is mixed with ammonium nitrate or urea to obtain balanced fertilizers, the low hygroscopic point of dried ammophos may impair the quality of the fertilizer. For example, a mixture of granulated ammophos from apatite with ammonium nitrate and a moisture content of 0.6% has a hygroscopic point of 54 to 56%, compared with 38 to 42% for a mixture of ammophos from Karatau phosphorites with ammonium nitrate and the same moisture content. The optimum moisture content of a mixture of Karatau ammophos with ammonium nitrate or urea should not be less 1/2

USSR

SAIBOVA, M. T., et al., *Uzbekskiy Khimicheskiy Zhurnal*, No 4, 1972, pp 23-25

than 2 to 2.5% thereby preserving good physical properties along with the highest hygroscopic point (52 to 54%). Further drying of these fertilizers would be economically undesirable and also sharply increase their hygroscopicity.

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USSR

UDC 546.711+632.9

BADALOVA, E. K., SEMENOVA, L. N., SAIBOVA, H. T., Chemistry Institute of the
Uzbek SSR Academy of Sciences

"Interaction of Manganese Salts with Organophosphorus Insecticides and Fertilizers"

Tashkent, Uzbekskiy Khimicheskiy Zhurnal, No 3, 1972, pp 7-10

Abstract: The methods of differential thermal and X-ray phase analysis were used to investigate manganese compounds formed on introduction of manganese sulfate into liquid urea-formaldehyde ammonium carbonate fertilizer and for interaction of manganese nitrate with organophosphorus insecticides, anthio and rogor. The introduction of manganese sulfate into liquid-urea-formaldehyde fertilizer is inexpedient since manganese converts to the carbonate form which is not assimilated by the plants. In the presence of the organophosphorus insecticide anthio, manganese nitride is precipitated in the form of the mono-sulfate and in the presence of rogor it converts to the oxides.

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1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THERMAL DECOMPOSITION OF MAGNESIUM NITRATE -U-
AUTHOR-(03)-BERG, L.G., BORUKHOV, I.A., SAIBOVA, M.T.
COUNTRY OF INFO--USSR
SOURCE--UZB. KHIM. ZH. 1970, 14(2), 32-4
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MAGNESIUM COMPOUND, NITRATE, THERMAL DECOMPOSITION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1999/1060 STEP NO--UR/0291/70/014/002/0032/0034
CIRC ACCESSION NO--AP0123053
UNCLASSIFIED

2/2 OTIO UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0123053
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DTA STUDY OF THE THERMAL
DECOMPN. OF HG(NO SUB3) SUB2.6H SUB2 O INDICATES ENDOTHERMAL EFFECTS AT
60, 85-90, 145-50, AND 410-35DEGREES; THERMOGRAVIMETRY INDICATES WT.
LOSSES AT 230, 370, AND 430DEGREES CORRESPONDING TO THE FORMATION OF
HG(NO SUB3) SUB2.2H SUB2 O, HG(NO SUB3) SUB2, AND HGO, RESP.
FACILITY: INST. KHIM., TASHKENT, USSR.

UNCLASSIFIED

USSR

UDC 591.1

BABSKIY, Ye. B., Academician, Academy of Sciences Ukrainian SSR, and
SAIDKARIMOV, S. K., Institute of Normal and Pathological Physiology,
Academy of Medical Sciences USSR, Moscow

"Formation of Acetylcholine in the Myocardium and Its Role in Suppressing
the Automatic Activity of the Ventricles by High-Frequency Excitation"

Moscow, Doklady Akademii Nauk SSSR, Vol 195, No 3, 1970, pp 746-749

Abstract: Perfusion of the isolated rabbit heart with acetylcholine ($1 \cdot 10^{-6}$ g/ml) reduced the frequency of spontaneous excitations of the ventricles by 34% on the average. After cessation of frequent electrical stimulation, the period of asystole lengthened markedly. The effects produced by acetylcholine were abolished by atropine. When the latter was added ($1 \cdot 10^{-5}$ g/ml) to the acetylcholine solution, the cardiac rate returned to normal and the duration of the preautomatic pause decreased to a point at which it was shorter than at the start of the experiment when the heart was perfused with Tyrode's solution. In another series of experiments, perfusion of the heart with physostigmine ($5 \cdot 10^{-6}$ g/ml) likewise slowed the frequency of excitations generated by the pacemakers of the

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USSR

BABSKIY, Ye. B., and SAIDKARIMOV, S. F., Doklady Akademii Nauk SSSR, Vol 195, No 3, 1970, pp 746-749

ventricles (by an average of 43%), while the period of asystole was lengthened by a factor 2.8. The effects produced by physostigmine were completely abolished by perfusing the heart with atropine. These results show that the action of physostigmine is related to the liberation and accumulation of acetylcholine in the myocardium phenomena, that take place both during rhythmic activity of the ventricles and after electrical stimulation. It was found that preliminary atropinization of the heart prevented both acetylcholine and physostigmine from slowing the excitations or lengthening the preautomatic pause of the ventricles upon the cessation of electrical stimulation.

2/2

1/2 016 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--EFFECT OF ADENOSINE TRIPHOSPHATE AND OUABAIN ON THE SUPPRESSION OF
THE AUTOMATION OF VENTRICULAR PACEMAKERS BY HIGH FREQUENCY EXCITATION
AUTHOR--(02)--BABSKIY, YE.B., SAIDKARIMOV, S.K.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(6), 1420-3
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ADENOSINE TRIPHOSPHATE, HEART STIMULATOR, SODIUM, POTASSIUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/1661 STEP NO--UR/0020/70/191/006/1420/1423
CIRC ACCESSION NO--AT0133566
UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AT0133566
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PERFUSION OF AN ISOLATED RABBIT
HEART WITH AN ATP SOLN. SHORTENED THE ASYSTOLIC PERIOD WHICH OCCURRED
AFTER THE AUTOMATIC VENTRICULAR PACEMAKERS WERE SUPPRESSED WITH AN ELEC.
CURRENT. PERFUSION WITH QUABAIN, HOWEVER, LENGTHENED THE ASYSTOLIC
PERIOD IRREVERSIBLY. INCREASING THE K OR LOWERING THE NA CONCN. OF THE
PERFUSION MEDIUM DID NOT ALTER THE QUABAIN EFFECT, BUT LOWERING THE CA
CONCN. SHORTENED THE ASYSTOLIC PERIOD CONSIDERABLY AFTER IT HAD BEEN
LENGTHENED BY QUABAIN. APPARENTLY THERE IS A RELATION BETWEEN THE
MEMBRANE ATPASE ACTIVITY, MEDIATED BY ION TRANSPORT, AND THE SUPPRESSION
OF THE VENTRICULAR PACEMAKERS WHICH LEADS TO THE ASYSTOLE.
FACILITY: INST. NORM. PATOL. FIZIOL., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: none

ABDUZHAMILOV, Sh., AZIMOV, S. A., SAIDKHANOV, N. Sh., and CHUDAKOV, V. M.

"Coherent Diffraction Generation of Ions by Protons in Photo-emulsive Nuclei"

Moscow, Yadernaya Fizika, vol. 15, No 2, 1972, pp 300-312

Abstract: This paper is a study of reactions of the type $p + A \rightarrow A + N + n\pi$, in which a nucleus with an atomic number of A does not vary in charge and is not excited: i.e., coherent diffraction generation of ions by protons takes place. The results of experiments in which a stack of Ilford K5 emulsions was irradiated by neutrons with an impulse of 20.8 GeV/s, and 3550 m of primary proton traces were scanned at an average rate of 1 m/hr, are given in tabular form and analyzed. The irradiation of the emulsion in a strong magnetic field of about 180 kilogauss permitted measurement of secondary particle impulses with good accuracy. Angular correlations are investigated through the use of the Lorentz-invariant azimuthal angles, and a mechanism for the reaction given above is developed. The authors express their gratitude to M. I. Podgoretskiy for his comments.

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- 93 -

USSR

UDC [537.226+537.311.33]:[537+535]

SAIDOV, A. S.

"Effect of Uniaxial Deformation on Activation Energy in p-Type Germanium"

Dokl. AN UzSSR (Reports of Academy of Sciences Uzbek SSR), 1971, No 7, pp 27-29
(summary in Uzbek) (from RZh-Fizika, No 1, Jan 72, Abstract No 1YE1345 by
L. KATAYEVA)

Translation: A study was made of piezoresistance and temperature dependence of specific resistance at varying compressive strain χ_c in p-type Ge. Variation in activation energy ϵ_2 under the action of uniaxial deformation was determined from the temperature dependence of specific resistance ρ for several values of compressive stress χ , since in this region $\rho = \rho_0 \exp(\epsilon_2/kT)$. Activation energy ϵ_2 increases with an increase of compressive stress to $\chi_c = 9 \cdot 10^8$ d/sq cm but declines with further increase of compressive stress χ_c . This dependence of activation energy ϵ_2 on compressive stress is due to the operation of two mechanisms: 1) variation of specific resistance of p-Ge with deformation; 2) marked increase of specific resistance with deformation, which can be explained by the appearance of activation energy ϵ_2 at 4.2°K. The results obtained tally with the evaluations made by other authors.

1/1

Instrumentation and Equipment

USSR

UDC: 621.791.052:620.178.7.05

KOPEL'MAN, L. A., SAIDOV, G. I.

"Installation for Determination of Mechanical Properties of Metal in Various Zones of a Welded Seam During Rapid Deformation over a Broad Range of Low Temperatures"

Moscow, Zavodskaya Laboratoriya, No 11, 1972, pp 1389-1393.

Abstract: The authors have developed a test installation consisting of a vertical frame with a dropping weight of 30 kg. The dropping height is up to 2000 mm, providing for application of tensile stresses at up to 6 m/sec. Particular attention was given to the production of a high-quality recording of the loading curve and to achievement of even distribution of temperature over the specimen. The dynamometer is in the upper clamp of the specimen holder, since the specimens used are too small (9 mm long, 1.2 mm diameter) for direct application of strain gauges. The errors of the device are estimated and a diagram is presented of the system used to cool the specimens.

1/1

Mechanical Properties

USSR

UDC 669.6:539.531:[669.3 + 669.71

SAIDOV, M. S., and SHUKUROV, I.

"Investigation of the Combined Influence of Copper and Aluminum Impurities on the Microhardness of Tin"

[Nauchn. tr.] Tashkent. politekhn. in-t ([Scientific Works] of the Tashkent Polytechnical Institute), 1970, vyp. 65, pp 319-321 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 1777 by V. BOCHKAREVA)

Translation: The purity of Sn, Cu, and Al used to produce alloys $\geq 99.999\%$. Cu and Al separately raise the microhardness of Sn. When present in combination, Al and Cu decrease the microhardness of Sn.

1/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--STUDY OF THE INTERACTION BETWEEN IMPURITIES IN SILICON WITH THE
HELP OF P-N JUNCTIONS -U-
AUTHOR-(02)-SAIDOV, M.S., SULMANOV, I. S
CCOUNTRY OF INFO--USSR
SOURCE--FIZIKA I TEKHN. POLUPROV., FEB. 1970, 4 (2), 256-259
DATE PUBLISHED--FEB70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--PN JUNCTION, SEMICONDUCTOR IMPURITY, VOLT AMPERE
CHARACTERISTIC, RECRYSTALLIZATION, INDIUM, CADMIUM, COPPER, TIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1284 STEP NO--UR/0449/70/004/002/0256/0259
CIRC ACCESSION NO--AP0124935
UNCLASSIFIED

2/2 021
CIRC ACCESSION NO--AP0124935

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEE ALSO PRECEDING ABSTRACT. THE INTERACTION OF VARIOUS IMPURITIES IN SI WAS STUDIED BY ANALYSING THE V-A CURVES OF P-N JUNCTIONS FORMED IN SI AS A RESULT OF THE INFUSION OF VARIOUS ADDITIVES. THUS THE INFUSION OF SN AND SN ALLOYS INTO DEGENERATE N TYPE SI PRODUCED AN S SHAPED REGION OF NEGATIVE RESISTANCE ON THE FORWARD BRANCH OF THE CHARACTERISTIC. THE INTRODUCTION OF IN, CO, AND CU TOGETHER WITH SN CHANGED THE CUT OFF VOLTAGE OF THE V-A CHARACTERISTIC; THIS EFFECT WAS ATTRIBUTED TO THE GROWTH OF A RECRYSTALLIZED LAYER OF SI, THE CONDITIONS OF GROWTH DEPENDING ON THE NATURE OF THE ADDITIVES. 9 REF.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--REGIONALIZATION OF THE PACIFIC OCEAN FLOOR FOR BENTHOS FORAMINIFERA
-U-
AUTHOR--SAIDOVA, KH.M. S
COUNTRY OF INFO--USSR, PACIFIC OCEAN
SOURCE--MOSCOW, DOKLADY AKADEMII NAUK SSSR, VOL 192, NO 5, 1970, PP
1145-1148
DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, BIOLOGICAL AND MEDICAL
SCIENCES
TOPIC TAGS--SEA FLOOR, OCEAN BOTTOM TOPOGRAPHY, FORAMINIFERA, REGIONAL
STUDY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/1985

STEP NO--UR/0020/70/192/005/1145/1148

CIRC ACCESSION NO--AT0133824

UNCLASSIFIED

2/2 J11

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0133824
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE AUTHOR HAS COMPILED A NEW REGIONALIZATION MAP OF THE FLOOR OF THE PACIFIC OCEAN ON THE BASIS OF THE WELL DEFINED RANGES OF 1,550 SPECIES OF BENTHOS FORAMINIFERA. THE MAP, ACCOMPANYING THE TEXT, SHOWS SIX ZOOGEOGRAPHIC PROVINCES AND 22 SUBPROVINCES. I. THE CENTRAL PROVINCE (WITH FIVE SUBPROVINCES) OCCUPIES THE CENTRAL PART OF THE PACIFIC OCEAN. THERE ARE 211 SPECIES OF AGGLUTINATING FORAMINIFERA, 68 OF THEM ENDEMIC. II. THE SOUTHEASTERN PROVINCE (WITH 2 SUBPROVINCES) OCCUPIES THE SYSTEM OF SOUTHEASTERN RISES AND DEEPS IN THE SOUTHWESTERN PACIFIC OCEAN RIDGE. THERE IS A PREDOMINANCE OF SECRETORY, WITH SOME AGGLUTINATING FORAMINIFERA. ABOUT 125 SPECIES HAVE BEEN DISCOVERED. III. ASIATIC AUSTRALIAN PROVINCE (WITH 8 SUBPROVINCES). IT OCCUPIES THE WESTERN PART OF THE OCEAN AND INCLUDES A SYSTEM OF ISLANDS, BASINS AND SEAS IN THE OPEN PART OF THE OCEAN. THERE ARE ABOUT 600 SPECIES, 547 OF WHICH ARE ENDEMIC. IV. THE BOREAL PROVINCE (WITH 3 SUBPROVINCES) COVERS REGIONS ADJACENT TO THE KURILE ISLANDS, KAMCHATKA, ALEUTIAN ISLANDS, ALASKA AND THE ALEKSANDR ARCHIPELAGO. THERE ARE 71 SPECIES, OF WHICH 54 ARE ENDEMIC. V. AMERICAN PROVINCE (WITH 4 SUBPROVINCES). THIS COVERS THE REGIONS ADJACENT TO THE SHORES OF NORTH, CENTRAL AND SOUTH AMERICA. THERE ARE 244 SPECIES, OF WHICH 197 ARE ENDEMIC. THE NUMBER OF SPECIES DECREASES FROM NORTH TO SOUTH. VI. THE ANTARCTIC PROVINCE HAS NO SUBPROVINCES. IT OCCUPIES THE CONTINENTAL SLOPE OF ANTARCTICA. THERE ARE 196 SPECIES, OF WHICH 109 ARE ENDEMIC. FACILITY: INSTITUTE OF OCEAN OLOGY.

UNCLASSIFIED

1/2 037 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--SPHERICAL CATALYST BASED ON ALUMINUM OXIDE -U-
AUTHOR--(02)-SAITOVA, M.A., GAYLYUNAS, G.A.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 266,739
REFERENCE--CTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--01APR70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ALUMINUM OXIDE, OXIDE CATALYST, CHEMICAL PATENT, MECHANICAL
STRENGTH, THERMAL STABILITY, CHROMIUM COMPOUND, MOLYBDENUM COMPOUND,
PETROLEUM PRODUCT, KEROSENE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1741 STEP NO--UR/0482/70/000/0000/0000
CIRC ACCESSION NO--AA0132007

2/2 C37

UNCLASSIFIED

PROCESSING DATE--20NDV70

CIRC ACCESSION NO--AA0132007

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. A SPHERICAL CATALYST BASED ON AL SUB2 O SUB3, SUCH AS ALUMINOCHROMIUM OR ALUMINOMOLYBDENUM OXIDE, WAS PREPD. BY THE FORMATION OF A GEL OF AL(OH)SUB3 AND A 2 LAYER MOLDING LIQ., THE UPPER LAYER OF WHICH WAS A LIGHT PETROLEUM PRODUCT, SUCH AS KEROSENE, AND BY THE SATN. OF AL(OH)SUB3 SPHERULES WITH A SOLN. OF A COMPD. OF AN ACTIVE CATALYTIC COMPONENT, DRYING, AND ROASTING. TO RAISE THE MECH. AND THERMLA STRENGTH OF THE CATALYST CONTG. AN INCREASED AMT. OF ACTIVE COMPONENT, A DIL. 12-15PERCENT NH SUB3 SOLN. OF THE NH SUB4 SALT OF THE ACTIVE CATALYTIC COMPONENT WAS USED FOR THE LOWER LAYER OF THE MOLDING LIQ. FACILITY: BASHKIR INSTITUTE OF ORGANIC CHEMISTRY.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--DETERMINATION OF THE INTERFACIAL TENSION OF LIQUID METALS WITH
SLA ACCORDING TO THE WEIGHT OF A DROP -U-
AUTHOR--(03)-DERYABIN, A.A., SAIDULIN, R.A., POPEL, S.I.
COUNTRY OF INFO--USSR
SOURCE--ZAVOD. LAB. 1970, 36(3), 292-3
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--SLAG, SURFACE TENSION, LIQUID METAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/1885 STEP NO--UR/0032/70/036/003/0292/0293
CIRC ACCESSION NO--AP0118847
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118847

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE WEIGHT OF A DROP METHOD WAS USED TO DETD. THE INTERFACIAL TENSION OF FE IN CONTACT WITH A SLAG OF THE COMPN.: CAO 40, SIO SUB2 40, AND AL SUB2 O SUB3 20PERCENT. ADDN. OF 7.05PERCENT OF FEO AND 3.22PERCENT OF FE SUB2 O SUB3 TO THE ORIGINAL SLAG LOWERED THE SURFACE TENSION FROM 1200 TO 750 MJ PER M PRIME2. THE SURFACE TENSION OF FE WAS NOT AFFECTED BY KEEPING IT FOR 2 HR AT 1570-1600DEGREES UNDER THE SLAG. THE INTERFACIAL TENSION OF FERROCHROME CONTG. 10. AND 15PERCENT CR IN CONTACT WITH A SLAG OF AL SUB2 O SUB3,CAO,MGO WAS ALSO DETD. BY THIS METHOD. THE RESULTS COINCIDED WITH THE ONES OBTAINED BY X RAY PHOTOGRAPHY. FACILITY: URAL NII

CHERN. MET., SVERDLOVSK, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--MAGNETOSPHERE MODEL BASED ON TWO ZONES OF PRECIPITATING ENERGETIC
PARTICLES -U-
AUTHOR--(03)-MISHIN, V.M., SAIFUDINOVA, T.I., ZHULIN, I.A.
COUNTRY OF INFO--USSR
SOURCE--J. GEOPHYS. RES. 75: 797-806, 1 FEB 1970
DATE PUBLISHED-----70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--MAGNETOSPHERE, MODEL, GEOMAGNETIC ACTIVITY, GEOMAGNETIC
DISTURBANCE, HIGH ENERGY PARTICLE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/0216 STEP NO--US/0000/70/075/000/0797/0806
CIRC ACCESSION NO--AP0126005
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0126005

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONTRARY TO WIDELY HELD IDEAS ON THE OVAL ZONE OF PRECIPITATION OF ENERGETIC PARTICLES INTO THE EARTH'S ATMOSPHERE, THE EXISTENCE OF TWO QUASI CIRCULAR ZONES OF PRECIPITATION WAS ESTABLISHED SEVERAL YEARS AGO ON THE BASIS OF GEOMAGNETIC ACTIVITY DATA. THE TWO ZONES WERE FOUND TO BE OF QUITE A DIFFERENT NATURE. ONE OF THESE ZONES, THE HIGHER LATITUDE ONE, HAS ITS MAXIMUM ON THE DAY SIDE (LATITUDE SIMILAR TO 77DEGREES); THE OTHER ZONE, THE LOWER LATITUDE ONE, HAS A CONSIDERABLY LONGER LATITUDINAL EXTENSION AND HAS ITS MAXIMUM ON THE NIGHT SIDE (LATITUDE SIMILAR TO 67DEGREES). THE CONCEPT OF THE OVAL ZONE AS A SINGLE UNIFIED ZONE IS NOT A NECESSARY CONCLUSION AND COULD BE A RESULT OF INSUFFICIENT DATA OR OF INCORRECT DATA REDUCTION. THE SAME CONCLUSION CAN ALSO BE REACHED ON THE BASIS OF THE ANALYSIS PERFORMED BY FELDSTEIN HIMSELF AND ON THE BASIS OF OTHER DIRECT AND INDIRECT DATA. IN THIS PAPER THE MAIN FEATURES OF TWO QUASI CIRCULAR ZONES ARE PRESENTED ON THE BASIS OF THE INSTANTANEOUS PATTERNS OF THE DISTRIBUTION OF GEOMAGNETIC ACTIVITY AS WELL AS ON THE BASIS OF THE DYNAMICS OF THESE PATTERNS. A MAGNETOSPHERE MODEL REFLECTING THESE FEATURES IS PRESENTED. THE SUGGESTED MODEL LINKS THE LOWER LATITUDE ZONE WITH PROCESSES OCCURRING IN THE MAGNETOSPHERIC TAIL, WHEREAS THE HIGHER LATITUDE ZONE IS CONNECTED WITH PARTICLE INJECTION THROUGH THE NEUTRAL POINTS. FACILITY: IZMIRAN, IRKUTSK, USSR.

UNCLASSIFIED

USSR

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UDC 621.382.3

GALAVANOV, V. V., RAVKOV, A. V., SAIMKULOV, Z. A.

"Alloy-Diffusion n - InSb Transistor"

Leningrad, Izvestiya VUZ, Priborostroyeniye, Vol 13, No 1, 1970, pp 13-14

Abstract: Certain characteristics are presented of an alloy-diffusion n-InSb transistor with $7.8 \times 10^{13} \text{cm}^{-3}$ concentration of noncompensated donors, and $5.5 \times 10^5 \text{cm}^2/\text{v. sec}$ electron mobility, designed for low temperature operation (down to 78°K). The emitter junction with 0.09mm^2 surface is formed by fusion, while the collector junction with 6mm^2 surface is accomplished with the aid of "outward" diffusion. The transistor's output characteristics at 78°C, as presented in the graph for emitter currents $I_e = 0, 1, 2, 3$, and 4mA , show that the transistor has good amplification properties. Its amplification coefficient is equal to 0.83 at $U_c = -1\text{v}$ and $I_e = 1 \text{mA}$, and decreases with increasing emitter current when $U_c = \text{constant}$. The collector reverse current does not exceed 10 microampere at $U_c = 1.8\text{v}$. The transistor differential input resistance in a circuit with a common

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USSR

GALAVANOV, V. V., et al, Izvestiya VUZ, Priborostroyeniye, Vol 13, No 1, 1970, pp 13-14

Abstract: emitter is 30 ohms at $U_c = -1v$. The results indicate the possibility of producing cooled InSb transistors for the use in low temperature circuits. Orig. art has: 1 figure.

2/2

- 128 -

Acc. Nr.: AT0046521

Ref. Code: UR014

USSR

UDC 621.382.3

GALAVANOV, V.V., RAVKOV, A.V., SAYMKULOV, Z.A.

"Fused-Diffusion n-InSb Transistor"

Splavno-diffuzionnyy tranzistor na baze n-InSb (cf. English above), Leningrad, Izvestiya Vysshikh Uchebnykh Zavedeniy, Priborostroyeniye, 1970, No 1, pp 13-14

Translation:

A fused-diffusion n-InSb transistor was fabricated, whose emitter junction was created by fusion, while the collector junction was created by exodiffusion. The transistor output characteristics measured in a circuit with common base are presented. The current gain $\alpha = 0.8$.

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Reel/Frame
19781778

1/2 045 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--STUDY OF THE WEAR OF THE ABRASIVE DURING FINE GRINDING -U-
AUTHOR-(03)-BOGOMOLOV, N.I., SAIUTIN, G.I., KHARCHENKO, I.V.
COUNTRY OF INFO--USSR
SOURCE--FIZIKO-KHIMICHESKAIA MEKHANIKA MATERIALOV, VOL. 6, NO. 2, 1970, P.
116-118
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--AVIATION INSTITUTE, ZIRCONIUM CARBIDE, FRICTION, TITANIUM
ALLOY, SILICON CARBIDE, WEAR RESISTANCE, ALLOY DESIGNATION, ABRASIVE
MINERAL, METAL GRINDING/(U)A1203 ABRASIVE, (U)W2B5 ABRASIVE, (U)VT8
TITANIUM ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/0090

STEP NO--UR/0369/70/005/002/0116/0118

CIRC ACCESSION NO--AP0125920

UNCLASSIFIED

2/2 045

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0125920

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. STUDY OF THE WEAR OF ABRASIVES INCLUDING SIC, A1203, W2B5, AND ZRC DURING FINE GRINDING OF ARMCO IRON, TITANIUM, AND TITANIUM ALLOY VT8. IT IS SHOWN THAT UNDER FINE GRINDING CONDITIONS, THE EFFECT OF CHEMICAL COMPOSITION OF THE GROUND MATERIAL ON THE WEAR INTENSITY OF ABRASIVES IS MUCH MORE PRONOUNCED THAN AT EXTERNAL FRICTION OF ABRASIVES ON METAL. FACILITY: KIEVSKII INSTITUT INZHENEROV GRAZHDANSKOI AVIATSII, KIEV, UKRAINIAN SSR.

UNCLASSIFIED

USSR

MAGZUMOV, B. Kh., SAIYANTS, T. I., TYUTINA, V. A., STARTSEVA, L. I., and GILMANOVA, G. A., Chair of Social Hygiene and Public Health Organization, Tashkent Medical Institute

"Study of Basic Cardiovascular Diseases in Tashkent From a Sociosanitary Aspect"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 10, Oct 70, pp 39-44

Abstract: The voluminous statistical data on the death rate due to cardiovascular diseases in the Soviet Union indicate that these diseases are the number-one killers. Not only medical but also sociohygienic and socioeconomic measures must be taken to combat this set of diseases; however, the etiology, pathogenesis, and treatment have not yet been studied in detail. A study was made of the characteristics of cardiovascular diseases in relation to work and living conditions, characteristics of the spread of cardiovascular pathology in nosological forms, and analysis of cardiovascular diseases with time loss in work capacity, disability, and death. Data from the medical-prophylactic records in Tashkent were used. Data on workers from various Tashkent industries were included. Among this group
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USSR

MAGZUMOV, B. Kh., et al, Meditsinskiy Zhurnal Uzbekistana, No 10, Oct 70, pp 39-44

7.8% had cardiovascular diseases. Hypertension was found most frequently in women. Those in sedentary occupations requiring little physical exercise were more susceptible to hypertension than those engaged in physical work. As a result of this study, it was recommended that steps be taken to combat rheumatic fever, influenza, and other infectious diseases, to specifically treat those who live and work under conditions which promote cardiovascular disease, and to carry out sanitary-educational work in the field of cardiovascular diseases.

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USSR

UDC 632.95

BUROVA, M. S., KUKALENKO, S. S., SAKADYNSKIY, K. I., ROSTOVITSEVA, YE. YE.,
MALYSHEV, A. I.

"Study of the Halogenation of α -Epichlorhydrine"

V sb. Khim. sredstva zashchity rast. (Chemical Means of Plant Protection -- collection of works), No 1, Moscow, 1970, pp 263-269 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N415)

Translation: During chlorination of α -epichlorhydrine (I), β, γ -dichlorohydrine, α, α' , α' -trichloracetone and α, α' , α' -trichlorisopropyl alcohol are formed. During bromination of I, α, γ -chlorobromohydrine is isolated as the primary product. The process of halogenation of I in the presence of scattered light and cooling, with heating and ultraviolet or radiation was investigated. A Cl_2 current flows into 207 grams of I at a rate of 0.2-0.4 liters/min at $10-15^\circ$; after 84 hours the HCl and Cl_2 are blown off the solution, and it is fractionated. Then 82.5 grams of Br_2 are added dropwise to 48 grams of I heated to $90-100^\circ$, and kept at 100° for 5 hours and the HBr is blown off and fractionated by gas chromatography.

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USSR

UDJ 621.315.592

BALTRAMEYUNAS, R., SAKALAS, A., STORASTA, YU., VAYTKUS, YU. [Vilnius State University imeni V. Kapsukas]

"Special Features Of Conduction In Ge Under Excitation By A Neodymium Laser"

Fizika i tekhnika poluprovodnikov, Vol 6, No 4, Apr 1972, pp 760-762

Abstract: The effect was investigated of the surface on the photoconductivity of n-Ge ($\sigma = 40 \text{ ohm}^{-1} \cdot \text{cm}^{-1}$) at 300°K . The specimens had unit [blokovyy] contacts. The single crystals were excited by pulses of a neodymium laser ($h\nu = 1.17 \text{ e.v.}$; $\tau_u = 40 \text{ nanosec}$) operating in one transverse mode. Oscillograms of the photoconductivity in nonetched specimens of Ge are shown and a graph is presented of the dependence of photoconductivity on the intensity of the laser light. The results obtained give a basis for the assumption that excitation by short laser pulses can prove to be useful for investigation of surface phenomena. 2 fig. 5 ref. Received by editors, 13 Oct 1971.

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- 191 -

USSR

UDC 621.375.4

SAKALAUSKAS, S. Yu.

"Selecting the Optimal Amplification Coefficient of Amplifiers with Compensated Input Capacitance"

Techn. kibernetika, Tekhn. kibernetika (Technical Cybernetics), Kaunas, 1970, pp 259-262 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8 D85)

Translation: This article contains an investigation of the magnitude of the amplification coefficient of the amplifiers with compensated input capacitance for which minimum values of the equivalent input capacitance are obtained.

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- 9 -

1/2 040

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--USE OF GLASS FIBER REINFORCED PLASTICS IN AIRCRAFT FOR CROP DUSTING

-U-

AUTHOR--(05)-SAKALLY, M.TS., GOLUBEVA, L.I., BALASHOV, A.YA., PLATONOVA,
V.N., TELNOV, N.I.

COUNTRY OF INFO--USSR

S

Declassified

SOURCE--PLAST. MASSY 1970, (2), 58-9

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, BIOLOGICAL AND MEDICAL SCIENCES, AERONAUTICS,
AGRICULTURE

TOPIC TAGS--CROP DUSTING, AIRCRAFT MATERIAL, GLASS FIBER, REINFORCED
PLASTIC, POLYETHYLENE, PHOSPHATE, CHEMICAL STABILITY, CONTAINER/(U)VP57
GLASS REINFORCED PLASTIC, (U)11ED SM GLASS REINFORCED PLASTIC, (U)PN1
GLASS REINFORCED PLASTIC, (U)EF32 0301 REINFORCED PLASTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1997/0663

STEP NO--UR/0191/70/000/002/0058/0059

CIRC ACCESSION NO--AP0119571

UNCLASSIFIED

272 040

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119571

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CORROSION RESISTANCE OF LOW D. POLYETHYLENE (I) AND OF SEVERAL GLASS FIBER REINFORCED PLASTICS, E.G., VPS-7, 11-ED SM, EF 32-0301, AND PN-1 WAS STUDIED TO DEVELOP A SUITABLE CONTAINER FOR BORDEAUX MIXT. AND SUPERPHOSPHATES (USED FOR CROP DUSTING AND SPRAYING). A VPS-7 CONTAINER (PRESSURE COATED WITH I) HAD SUPERIOR WEAR RESISTANCE AND CHEM. STABILITY. CONNECTING METAL TUBES AND SPRAYING HOSES WERE ALSO REPLACED BY VPS-7 REINFORCED I TUBES.

UNCLASSIFIED

USSR

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UDC 678.06-419.8:677.5217.004.14:
631.37:655.7

SAKALLY, M. TS., GOLUBEVA, L. I., BALASHOV, A. YA., PLATONOVA,
V. N., TEL'NOV, N. T.

"Utilization of Fiberglass Plastics for Agricultural Aviation
Apparatus"

Moscow, Plasticheskiye Massy, Vol 2, 1970, pp 58-59

Abstract: Because of the fact that metallic units used in air spraying of agricultural fertilizers or toxic agents are corrosive, an attempt was made to find more resistant materials. The authors experimented with fiberglass VPS-7, 11-EDSM, EF 32-301, PN-1 materials and with low density polyethylene. As a result of their work, materials were made from fiberglass VPS-7 to assure strength, and plated with low density polyethylene films to give the desired chemical resistance. In this manner reservoirs for chemical agents and the dispersing arms could be manufactured.

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USSR

UDC 616.981.42+591.147+445

SAKANYAN, S. Sh.; TOROSYAN, S. Ye.; BUNATYAN, L. O.; Armenian
Scientific Research Institute of Animal Husbandry and Veterinary
Science and Yerevan Veterinary Institute

"Role of the Adrenals, Pancreas, and Gonads in the Mechanism of
Cerebrocortical Influence on Postvaccinal Immunity Against
Brucellosis"

Yerevan, Biologicheskii Zhurnal Armenii, No 6, 1971, pp 75-77

Abstract: Earlier experiments showed that moderate amounts of
caffeine stimulate postvaccinal immunity against brucellosis
and that the hypophysis and thyroid play an important part in
the process. In rabbits vaccinated against brucellosis and
then adrenalectomized, antibody formation was inhibited and
phagocytosis by reticuloendothelial cells decreased regardless
of whether or not animals received caffeine, i.e., elimination
of adrenal function blocked the effect of caffeine. Thus, it
would appear that the adrenals are involved in the mechanism of
transmission of nerve impulses (stimulated by caffeine) to the

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1971, pp 75-77

organs responsible for the development of immunity. The pancreas
and gonads, however, do not participate in the process.

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UDC 615.371/372:616-097:616.9-85.37

SAKANYAN, S. Sh., Zooveterinary Institute, Yerevan

"Endogenous Inhibitors of Postvaccine Antibody Production"

Yerevan, Biologicheskii Zhurnal Armenii, Vol 24, No 10, 1971, pp 19-24

Abstract: Many works concerning the production and inhibition of antibodies in the animal organism were reviewed. None of the existing theories explain satisfactorily a very active production phase of antibodies immediately after vaccination and the inhibition phase which follows thereafter. Three groups of rabbits were vaccinated with brucellosis vaccine combined with inhibitors obtained from rabbit-donors 5, 15, and 30 days after immunization against brucellosis. One control group received only vaccine, the other, vaccine and an "inhibiting medium" from intact rabbits. From the obtained contradictory results, the conclusion is drawn that the immunized organism produces automatically and independently of other factors the antibody synthesis inhibitors during the postvaccine period. These inhibitors have a specific mechanism of action which remains to be discovered. At present it can be assumed only that the stimulation and inhibition of antibody synthesis during the postvaccination period by exogenous stimulators and inhibitors is related to the production of endogenous inhibitors which could be either accelerated

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SAKANYAN, S. Sh., Biologicheskiy Zhurnal Armenii, Vol 24, No 10, 1971,
pp 19-24

or inhibited by some unknown mechanism. The biological nature of inhibitors
of antibody synthesis remains to be answered by future works.

Immunology

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UDC 616.981.42+591.481.2

SAKANYAN, S. Sh., TOROSYAN, S. Ye and BUNATYAN, L. O. Armenian Scientific Research Institute of Animal Husbandry and Veterinary Science, Yerevan Zoo-veterinary Institute

"The Effect of Caffeine on the Effectiveness of Brucellosis Vaccination during Inhibition and Stimulation of Pituitary Function"

Yerevan, Biologicheskii Zhurnal Armenii, Vol 23, No 5, May 70, pp 94-96

Abstract: The effect of caffeine on the effectiveness of brucellosis vaccination was studied in rabbits with blocked and activated pituitary function. One group of rabbits was given cortisone (150 mg/kg) once daily for 5 days. A second group was given caffeine (1.0 ml of 1% solution). A third group was immunized after subcutaneous injection of somatotrophic hormone, in a dose of 1.2 g/kg. A fourth group served as controls for caffeine and a fifth as controls for immunization. After 30 days, Brucella cultures were subcutaneously injected into all animals. Experiments indicated that immunity was more pronounced when caffeine was administered. It was concluded that the nerve stimulus produced by caffeine is transmitted to other organs generating immunity through the pituitary gland.

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UDC 619:615.5-015:612.017.1

SAKANYAN, S. Sh., Professor, YEREMYAN, S. A., Candidate of Biological Sciences and PAVLENKO, M. M., Senior Laboratory Worker, Yerevan Zooveterinary Institute

"The Effect of Some Drugs on Immunological Reactions"

Moscow, Veterinariya, No 9, Sep 70, pp 50-51

Abstract: The effects of acriflavine, penicillin, phenoxymethylpenicillin, and tetracycline antibiotics (tetracycline, chlortetracycline, and oxytetracycline) on the formation of agglutinins after immunization were studied. Rabbits were immunized by subcutaneous injection of brucellosis vaccine (strain 19) in a dose of 2.5 billion cells. The effect of the drugs on the phagocytic activity of reticuloendothelial cells without immunization were also determined. Acriflavine was administered intravenously twice during the 3 days before immunization, at the time of immunization, or 15 days after immunization. The antibiotics were administered in single daily doses for 15 days, beginning 5 days before immunization, on the day of immunization, or 14-15 days after immunization. Penicillin was given intramuscularly; the other antibiotics were given per os. In a dose of 1 mg/kg, acriflavine stimulated formation of agglutinins when given before or soon after immunization, but had no effect 15 days after immunization. It did not affect phagocytic activity in this dose. Acriflavine

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SAKANYAN, S. Sh., et al., Veterinariya, No 9, Sep 70, pp 50-51

in a dose of 5 mg/kg inhibited formation of agglutinins when administered before immunization and stimulated it when given after immunization. It stimulated the phagocytic activity in every case when given in this dose. Acriflavine in a dose of 10 mg/kg had no effect on the formation of agglutinins when given at the time of immunization, but increased the reactivity of the animals upon a second immunization. When administered before or after immunization in this dose, acriflavine inhibited the formation of agglutinins to a considerable extent, but had no effect on reactivity with respect to reinmunization. It inhibited the phagocytic activity in every instance. The tetracyclines in large (50 mg/kg) or, particularly small (10 or 15 mg/kg) doses stimulated the formation of agglutinins (with the exception of a large dose of oxytetracycline which had a depressing effect. Penicillin and phenoxymethylpenicillin in a dose of 5000 units/kg, irrespective of the time of administration, accelerated the formation of agglutinins during the first 10-20 days after immunization. Phenoxymethylpenicillin in a dose of 50,000 units/kg inhibited formation of agglutinins when given before immunization or beginning with the day of immunization, but had no effect when administered after immunization. Chlortetracycline and oxytetracycline in doses of 10 mg/kg stimulated phagocytic activity, but

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inhibited it in a dose of 50 mg/kg. Tetracycline stimulated this activity in both doses. Beginning with a dose of 5,000 units/kg, penicillin inhibited the phagocytic activity, while phenoxymethylpenicillin stimulated it in the same dose. In a dose of 50,000 units/kg, phenoxymethylpenicillin inhibited phagocytic activity in a pronounced manner. The effects of antibiotics on the phagocytic activity of reticuloendothelial cells were somewhat altered when they were administered in combination with the vaccine.

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UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--EFFECT OF CONTINUOUS NEUTRON IRRADIATION ON THE STRUCTURE AND
PROPERTIES OF MAGNETIC ALLOYS OF THE YUNDK, IRON NICKEL ALUMINIUM
AUTHOR--(05)-GRINBLAT, YU.N., LYASHCHENKO, B.G., ROGOZYANOV, A.YA.,
SAKATUNOV, YU.S., SHELKOVNIKOVA, G.YE.

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF CONTINUOUS NEUTRON IRRADIATION (10 PRIME21 N-CM PRIME2) AT TEMP. UP TO 630DEGREESC ON CAST AND SINTERED ALLOYS OF THE YUNDK TYPE (FE,NI,AL AND FE,NI,AL,CO) USED FOR PERMANENT MAGNETS WAS STUDIED. BECAUSE OF THE RADIATION, SPECIAL METHODS WERE REQUIRED FOR MEASURING THE MAGNETIC PROPERTIES AND ELECTRICAL RESISTANCE AND FOR STUDYING THE MATERIAL IN THE OPTICAL AND ELECTRON MICROSCOPES. NO CHANGES IN THE STRUCTURE OR PROPERTIES ATTRIBUTABLE TO THE IRRADIATION WERE OBSERVED; CHANGES OCCURRING ABOVE 600DEGREESC WERE DUE SOLELY TO THE ORDINARY EFFECTS OF HEAT TREATMENT.

UNCLASSIFIED

USSR

UDC 621.373:530.145.6:621.317.17

KURNEVICH, B. A., SAKAYEV, O. O., TOROPOV, A. K.

"A Spectrometer With Interferometer With Spherical Mirrors for Studying Gas Lasers"

Tr. Sib. NII metrol. (Works of the Siberian Scientific Research Institute of Metrology), 1971, vyp. 9, pp 28-35 (from RZh-Radiotekhnika, No 8, Aug 71, Abstract No 82240)

Translation: The paper describes a spectrometer based on a scanning interferometer with spherical mirrors with Q-selection of singular longitudinal modes; the device is not critical to matching with a laser. With respect to simplicity of construction and practical use, it is easily competitive with plane-parallel interferometers. The scanning interferometer is based on a cavity of semi-confocal geometry. The natural longitudinal modes are selected by means of a circular inner diaphragm. The input mirror of the interferometer is flat to reduce power losses. A necessary condition for matching is coincidence of the optical axes of interferometer and laser. The registered resolution is 15 MHz or less. A. K.

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ABSTRACTS OF ARTICLES PUBLISHED IN THIS ISSUE

[Abstracts: Moscow, Vsesnit Akademii Meditsinskikh Nauk SSSR, Russian, No 2, 1972, p 56]

JPRS 553521
29 Mar 72

SAKAYEVA, Ye. A.

"Medicobiological Investigations Dealing with the Use of Estrogens as Growth Stimulating Agents," by A.A. Pokrovskiy, M.F. Nestorin, G.P. Vavilina, Ye. Ye. Pyzantseva, L.Ya. Solov'yeva, p. 3.

As a result of medicobiological examination of meat products obtained from bull calves stimulated with diethylstilbestrol, it was shown that the recommended method of using this hormone does not rule out the possibility of retention in subproducts of meat of residual quantities of this agent. When feeding laboratory animals on experimental meat there was manifestation of some adverse effects on their development and change in sex gland function. On the basis of the data obtained and the literature, with due consideration of worldwide experience in using diethylstilbestrol to fatten various species of animals, the authors conclude that it is impossible to use this preparation in animal breeding.

There are eight tables, one illustration; bibliography lists 118 items.

"Experience with Vitamin E Supplement for Bicycle Racers and Skiers," by Ye. A. Sakayeva, V. V. Yefremov, p. 52.

A study was made of the effect of different intensities of physical stress on vitamin E availability in the organism of cyclists and skiers during winter sport weeks. As a result of the study it was found that 1.5-2 g content in the blood serum of the athletes. A considerable decline in vitamin E content in doses of 50-150 mg for cyclists who trained for 1.5-2 hours and 200-300 mg for skiers who trained for 3-4 hours raises the blood serum vitamin E level and results in greater efficiency of the athletes.

Two illustrations; bibliography lists nine items.

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"A True Antrumectomy Technique in Surgery for Peptic Ulcers," by Yu. N. Pantarev, A. A. Grinberg, T. I. Laktionova, p. 72.

A method is described for pinpointing the boundaries of the entral portion of the stomach during surgical interventions using 2% solution of Congo red dye as an indicator on the gastric mucosa. The method has been developed experimentally and used in clinical practice on 30 patients with duodenal and gastric ulcers; this revealed that it is simple, safe, and permits performance of a true antrumectomy, in other words, it permits the performance of a functionally substantiated sparing operation on the stomach. The precision of the method was confirmed by histological examinations.

Two illustrations; one table; bibliography lists 24 items.

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CSO: 1647-W